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LATTIMER-STEVENS
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DEPOSIT

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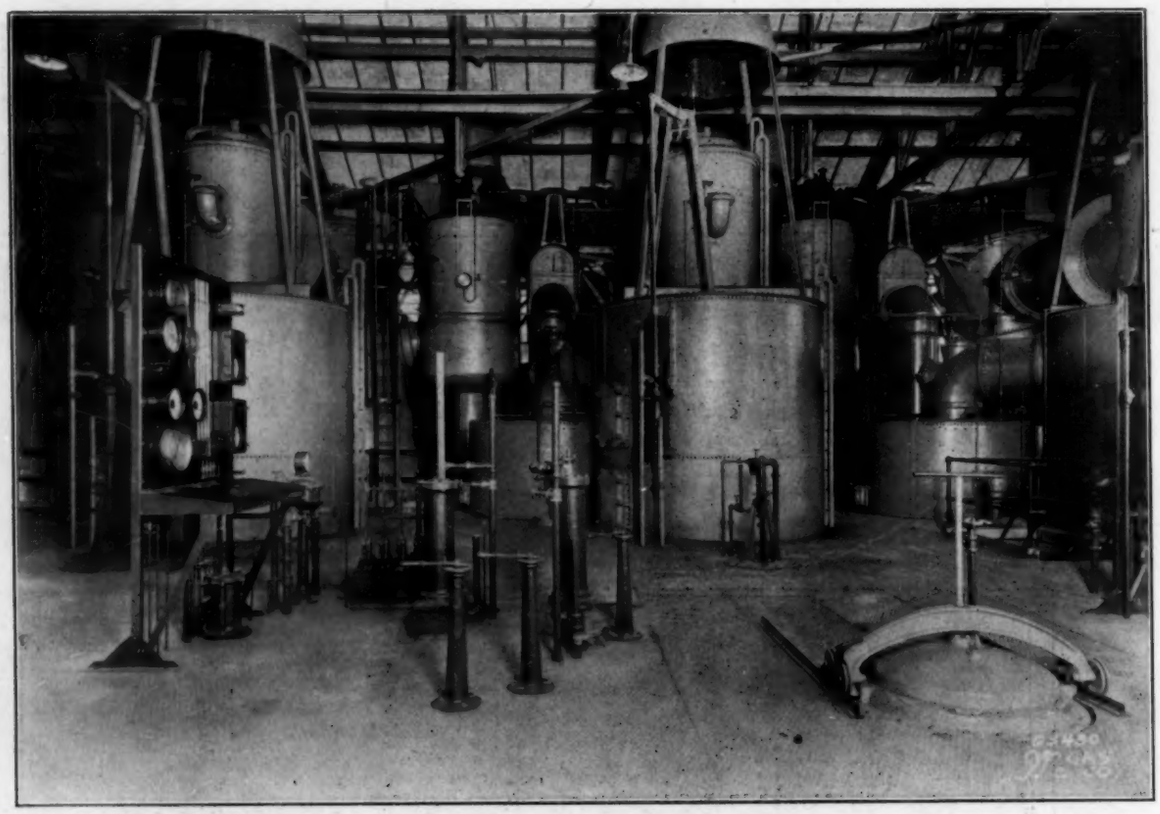

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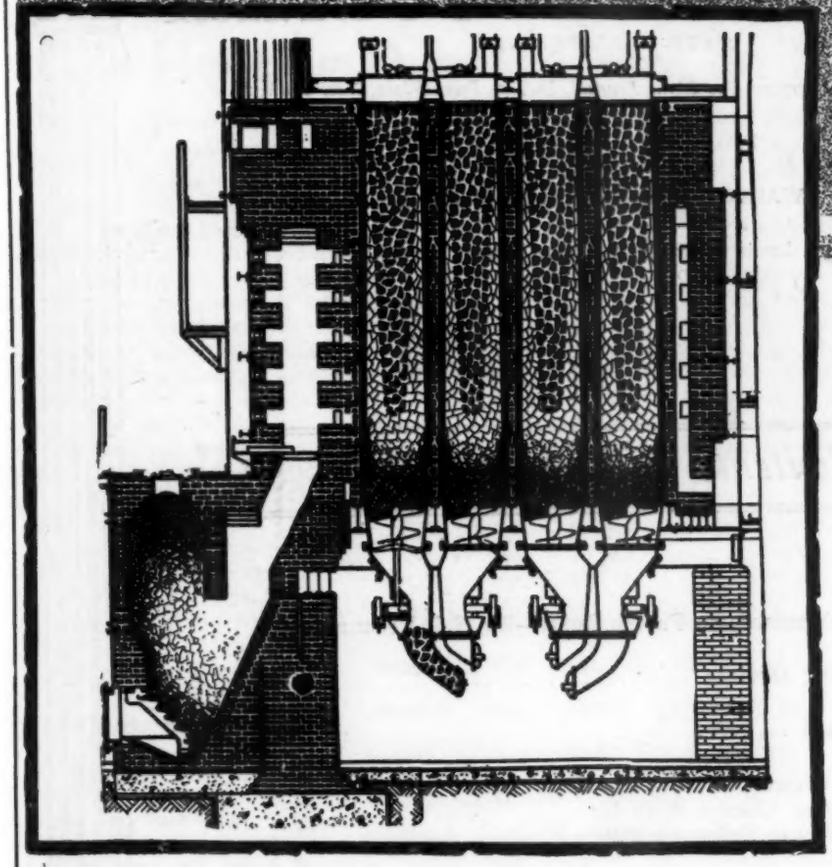

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American Gas Journal

SIXTY-THIRD YEAR

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Gas Heating Development on Pacific Coast

Something of What Has Been Accomplished in the Last Five Years

By H. L. ECKENROTH, Heating Engineer, Pacific Gas & Electric Company

Probably no other industry on the Pacific Coast has enjoyed the rapid growth that has attended the gas industry, as the increase in the use of this most modern fuel in the past five years, for industrial as well as domestic purposes, has been little short of phenomenal.

While gas as a heating medium is not at all a new application, it would appear that the manufacturer of gas appliances had slept blissfully for many years, ignoring almost entirely the great field that lay before him—the field of gas appliances. There came, however, a great general awakening, partially due to the fact that gas lighting was rapidly giving way to electricity, and our manufacturer began in an earnest, and what has proved to be a well-rewarded, effort to place gas as a fuel in its rightful position through the medium of attractively and practically designed gas appliances, substantially and intelligently constructed to burn gas efficiently.

Here is a record of accomplishment for the past five years that should cause every gasman to point with pride to his industry. The achievements cited have been gained only by hard work.—Editor.

The beauty, efficiency and general superiority of the present-day gas range, with its thermostatic ovens, time-clocks, etc., over the range of five or six years ago is a fair example of what has taken place over the entire field of gas appliance manufacture, and it is quite apparent that our manufacturers upon awakening more than outdid themselves in making up for lost time, improving continually on the appearance, finish, decoration and, last but far from least, the efficiency of their product, until what a few years ago was a "messy chunk of iron" has reformed and reconstructed itself to be a rather pleasing thing to look upon.

Armed with these proper and appealing implements, gas companies instituted intensive sales campaigns: the small dealer's help was enlisted to the mutual benefit of himself and the central station, with the result that gas to-day is rapidly becoming recognized as the truly "ideal fuel."

As my own operations for the past five years have been confined to house heating, I will restrict myself to this subject, eliminating entirely the splendid accomplishments of my co-workers in the application of gas fuel to factories of every description, hotels, restaurants, laundries, canneries, foundries, etc.

It is strange but quite true that the general public is slow to grasp or appreciate anything that is new to them—particularly a mechanical device. Regardless of what its virtues may be or what economies and conveniences this device may promise, the public is usually skeptical and wary, and not entirely without cause. The public has been much preyed upon; it has been sold many things that were made to be sold and not to be used; it has been much misinformed and misled, therefore it has become skeptical and it has become wary.

For many years practically the only gas heating appliances available consisted of various types of portable heaters, gas grates and a limited amount of gas radiators resembling as closely as possible steam and hot-water radiators. No particular attention was paid to burner construction, the burners usually consisting of an ordinary piece of half-inch gas pipe capped on one end, a dozen or more drilled ports or burner holes, an air mixer and stopcock on the other end; or, in the case where a luminous flame was used, lava tips were employed.

While the sale of these appliances flourished to a degree, they did not in any way answer the crying need of a general heating plant, nor were they acceptable where healthful and safe heating was required or demanded but were considered only for their cheapness or as auxiliaries.

Must Overcome Prejudice

The most difficult task of the present-day gas heating salesman or engineer is to overcome the prejudice aroused by the use of this type of gas heater, with its leaky gas hose connection, with its poor combustion and

Typical Apartment House Heated by Automatic Gas-Fired Steam Boilers

no provision for eliminating entirely from the room the by-products of its combustion, more commonly known as "odor and moisture."

With the gas ranges, water heaters and domestic appliances in general firmly established and ably handled by the dealers, this company turned its attention to the larger and newer field of industrial and house heating equipment, and in the spring of 1917 started its first intensive campaign for developing and securing this class of business. How well it succeeded is clearly shown in the following paragraphs.

Experience has taught me that one of the most important things attendant to the successful gas heating engineer is his capability of explaining to a prospective purchaser as clearly and as simply as possible, by way of ordinary comparisons with which the prospective purchaser is thoroughly familiar, the merits of modern gas equipment.

As an example, the average woman, and almost as many men, does not know whether carbon monoxide is a carbonated water or a cold tablet; they know less about a B.t.u. than most of our attorneys do about the Eighteenth Amendment, don't know a good burner from a shower sprinkler, and have less inclination to learn about these things than the Allies have of paying their debts.

However, if you explain that for truly healthful gas heating you must vent a gas appliance, throw a little of the heat away for the same reason that you peel potatoes, shell peanuts, etc., they will grasp the full situation immediately. If you explain to them that the gas itself is burned in a tight iron box from which a pipe is run to the chimney, and it is only the heat that is thrown off from the *outside* of this box that comes up into their rooms, they will readily understand why it is impossible for them to get any "odor" or "moisture" from their heating plant.

Started Five Years Ago

After carefully selecting the particular types and makes of appliances to be recommended, and compiling all available data, we started out in earnest, some five years ago, to sell and install gas furnaces as central hot-air heating plants for heating homes, schools, churches, office buildings, factories—in fact, every type of building where heating was required. Automatic features, such as time-clock, thermostatic and push-button controls, were incorporated in the majority of these installations, and as these controls eliminated almost entirely the human factor they sprang into favor so rapidly that at the present time few installations are sold without them.

Typical High-Class Residence Heated with Gas

Church Installation of Gas-Fired Hot-Air Furnaces and Blower

Without going into detail on the progress of this campaign, its success is most clearly shown by the fact that there have been sold and installed in the cities of San Francisco, Oakland and the immediate vicinity, in the past five years, approximately 3,400 gas-fired hot-air

furnaces, with an approximate consumption of 596,000,000 cu. ft. of gas per annum.

About two and one-half years ago, after the usual thorough tests were made, a gas-fired boiler for steam and hot-water heating plants was adopted, with the result that to date approximately 400 of these boilers, with an approximate gas consumption of 70,000,000 cu. ft. per annum, have been sold and installed in the territory above mentioned.

The value of these boilers, with their absolute automatic control, was readily appreciated by those operating low-pressure steam or hot-water heating plants, particularly apartment house operators. They eliminated entirely the cost of attendants, whose services in most cases have proven very inefficient and unsatisfactory. In addition, an adequate fuel supply at all times is assured at a moderate price; which, together with the fact that the boiler room is not required to be made fireproof, is free of all ash, dirt and stored fuel, and the boiler itself is maintained gratuitously by the gas company, has established this appliance firmly in the heating field.

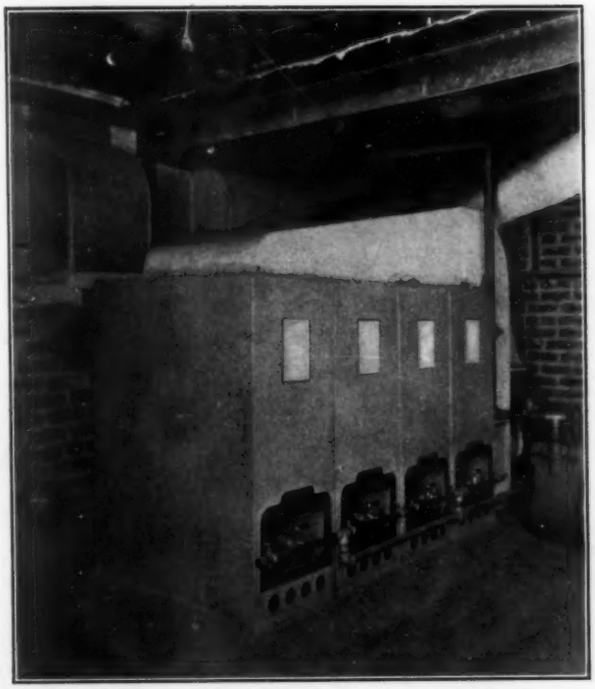
Efforts Have Been Successful

In addition to the hot-air furnace and the steam

Typical Factory Installation, Showing Gas-Fired Hot-Air Furnaces and Blower

boiler, with their automatic controls, thousands of Radiant-type fireplace heaters, vented radiators and heaters of all descriptions have been sold, and it is most gratifying for us to look back over these last five years and realize what great success has attended our efforts to place gas as fuel in its rightful position.

Do not be misled, however, to believe that this equipment was from the outset received with open arms amid cheers and applause. It most emphatically was not; for, as I have stated, our public had been "sold" odor and moisture and other defects for years, and it was no

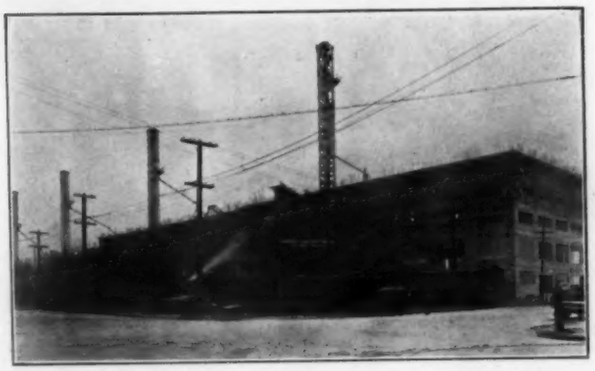


Furnace and Blower Room, "Taits at the Beach"

easy matter to start this stuff off to the particular, skeptical consumer who had a "heater that smelled," that "gave off that awful moist heat"; and, again, if he or she had not had one they were sure to know a "friend that had one." Then, there were the architects, heating engineers, consulting engineers, "insulting" engineers and what not. No, it was no easy matter.

Briefly, this is how it was done: Two men—only two—were turned loose in San Francisco. They were salesmen and they were gasmen—men who had been schooled in the ways of the gas business for many years—and if they did not know all about the intricacies of the gas and gas heating business, they knew at least as much about it as did anybody else and a great deal more about it than most people did.

While it is not my intention at this time to define what in my opinion goes to make up the ideal gas appliance salesman, I will say that I can think of no greater calamity than that of placing the sale and installation of



Southern Pacific Warehouse—Largest in the West—Under Construction

Golden Gate Park Memorial Museum

a gas heating system in the hands of a salesman who is not a gas heating man. He should be a gas heating engineer.

Dealing with a Human Failing

To substantiate this statement, I am sure you will find that while a good, satisfactory, well-made installation will be the direct cause of selling another, or two, or three, or more, one poor, improperly made installation will spoil a hundred sales. You will hear its echo for years to come; for, unfair as it may seem, the average human will not go greatly out of his way to advertise something that has been purchased and found satisfactory, but will, on the other hand, shout a failure from the housetops for ever and ever.

Some mistakes were made—very few, to be sure—but who that does things does not make a mistake occasionally? If we did not do these things ever the cost of lead pencils could be greatly reduced by the elimination of the eraser on the end. Still you will all agree with me that this is a very handy appliance, this eraser, occasionally. These mistakes, however, were in every case speedily rectified and the same mistake was never allowed to occur a second time, for each had taught a lesson.

Rear View, Golden Gate Park Memorial Museum, showing north and south heater houses, cold air intakes and flues

Fully aware of the importance of their mission, these two men worked ceaselessly, carefully and intelligently, and in a comparatively short space of time the wedge was driven.

First came the small residence with a furnace burning 100 cu. ft. of gas per hour, heating three rooms, then the larger residence consuming 200 to 300 cu. ft. to heat from seven to eleven rooms; then the church, the office building, the factory and so forth, until it has become so—through the intelligent selling and installation of the earlier systems and the educational campaign being constantly pursued by the Pacific Gas & Electric Company, by means of its engineers, its laboratory showroom where all of this equipment is demonstrated from 8.30 a. m. to 5.00 p. m. daily, and the medium of advertising—that his equipment is specified constantly by architects, engineers and builders.

Actual Installations Made by Outsiders

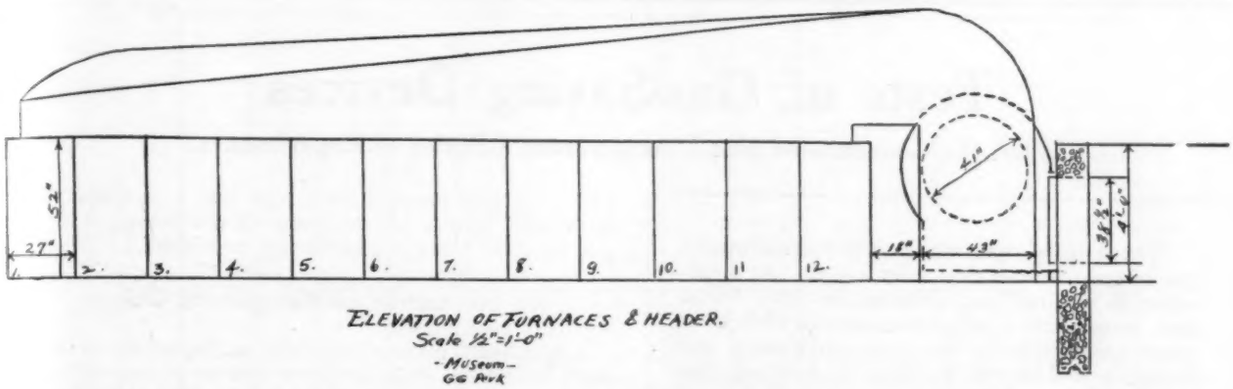
Although the appliances themselves were sold and maintained by the gas company, the actual installations of these heating plants were turned over to outside

"Taits at the Beach," San Francisco's Famous Cafe, Heated with Gas

sheet-metal workers, steam fitters, gas fitters and plumbers, as the company employed none for this particular work. However, the installations were made under the supervision of the gas company engineers. This greatly encouraged these contractors, as it demonstrated clearly to them that the gas company did not wish to interfere with their interests in any way as contractors, but, on the other hand, created more work for them. It also convinced them that a fair profit could be realized from the sale of the appliances themselves, and that the gas company stood ready to assist them in making the actual sale, providing the proper equipment was specified.

The result of this policy has been that the fitters, sheet-metal workers and small dealers are actively engaged in selling and installing gas heating equipment wherever possible.

The two most recent installations worthy of special mention, being the largest of their respective classes in the West, if not in the entire United States, are the Golden Gate Park Memorial Museum and the Southern Pacific Terminal Warehouse building, the latter being



ELEVATION OF FURNACES & HEADER.
Scale ½"=1'-0"
- MUSeum -
GG Park

heated with a standard low-pressure steam system—the steam being supplied by four Bryant automatic gas-fired steam boilers, totaling ninety-eight sections, with a maximum possible consumption of 5,000 cu. ft. of gas per hour. These boilers are so situated that they are directly under that section of the building heated by them, thereby eliminating considerable transmission loss due to long pipe runs and making for the highest possible efficiency.

Heating the Museum

The heating of the Golden Gate Park Memorial Museum presented a much more difficult problem due to the construction and design of the building itself, which was built close to the ground, as well as the fact that cabinets, display cases, statuary, paintings, tapestries and exhibits in general made it almost impossible to find practical radiator locations for a direct steam or hot-water heating system.

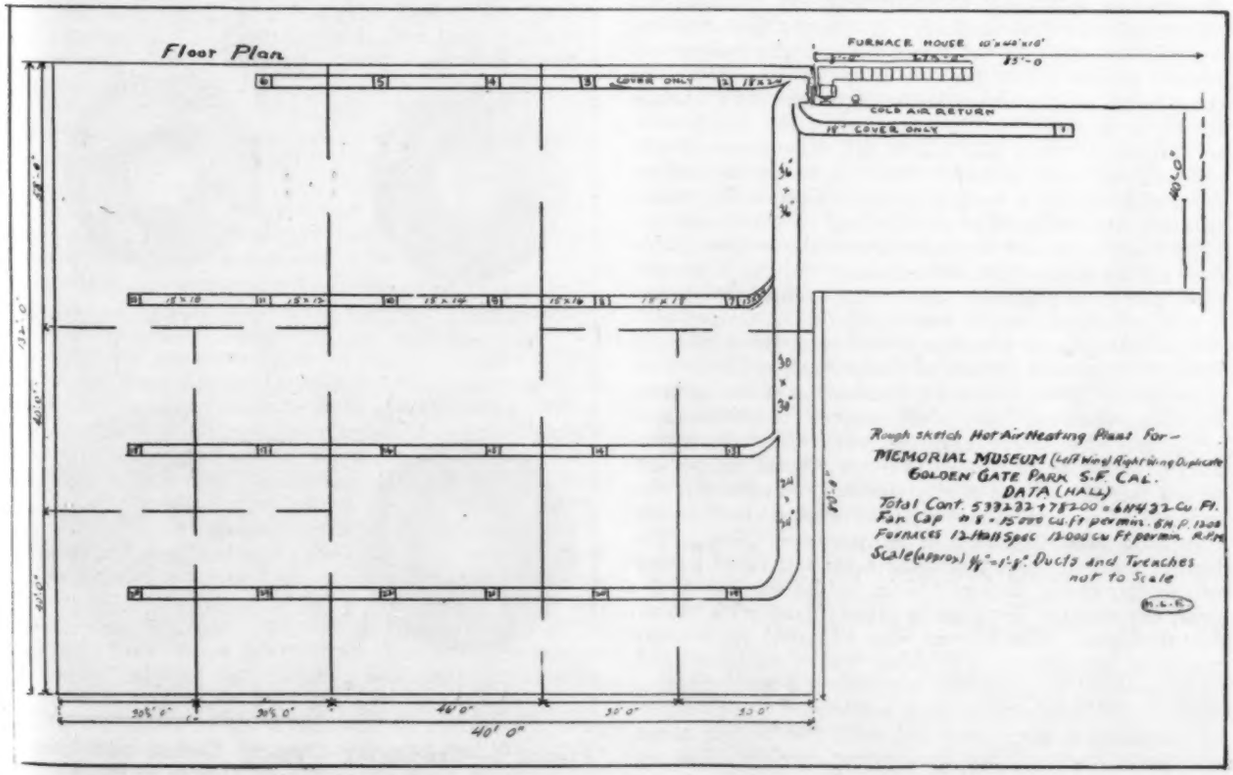
After a careful survey of the situation it was decided that a direct hot-air heating plant with a large number of small registers, well distributed, would be the most practical and efficient manner in which to heat this building, and the following installation was made:

An excavation 4 ft. deep was made at the rear of each of the two wings of the building to allow for the erection of two concrete furnace houses approximately 40 ft. long and 10 ft. wide, in which way the mouths of the blowers exhausted directly below the floor of the museum building.

Twenty-four Heating Registers Installed

From this point channels, or concrete-covered ditches, 800 ft. in length and graduating from 3 by 3 ft. to 10 by 12 in. were cut into the floor of each wing and twenty-four heating registers installed. The heated air is forced through these channels by a blower supplying 15,000 cu. ft. of air per minute, and a swing damper makes it possible to draw the cold air from outdoors,

(*Continued on page* 534.)


Floor Plan
FURNACE HOUSE
COVER ONLY
COLD AIR RETURN
18" COVER ONLY
40'-0"
Rough sketch Hot Air Heating Plant for—
MEMORIAL MUSEUM (Left Wing Right Wing Duplicate)
GOLDEN GATE PARK S.F. CAL.
DATA (HALL)
Total Cont. 539232+78200 = 617432 Cu Ft.
Fan Cap #8 - 15000 cu ft per min. 6H.P. 1300
Furnaces 12 Hall Spec 13000 cu Ft per min. R.P.M.
Scale (approx) ½"=1'-0". Ducts and Trenches not to Scale
30½' 0"
30½ 0"
46' 0"
35' 0"
35' 0"
40' 0"

Tests of Gas-Saving Devices

What the Government Has Learned from a Series of Experiments

"These tests were made with manufactured gas but we believe that they are just as applicable to natural gas, because we have found that incomplete combustion occurs with both gases under exactly the same conditions, and therefore we do not hesitate in making this statement.

"We are sure you will agree with us that this is rather important information for the industry. We know that these devices are in use. They have been sold in various cities, and invariably complaints of odor have been made. The consumer is ignorant of the fact that the odor, which is really formaldehyde, is accompanied by carbon monoxide. The two seem to go hand in hand."—Statement by Bureau of Standards when the article was submitted for publication.

The increase in the price of gas during the war and the conservation programs sponsored by public and private organizations have suggested to people with inventive minds numerous means for reducing the consumers' gas bills. As a result, many so-called gas-saving devices have been patented and are being sold to the public. These devices are not, in general, designed with a view to correcting any fault which might exist in the consumers' appliance with the exception of raising the flame where the burner is placed too far below the top of the stove. They occupy much of the space between burner and utensil which is required for the aeration of the flame with secondary air, and also baffle the movement of the products of combustion. The use of these devices invariably causes a spreading and lifting of the flames to such an extent that smothering of the flame results when a utensil is placed above the burner. Under this condition the combustion of the gas is incomplete and a considerable amount of carbon monoxide, a very poisonous gas, is produced.

The Bureau of Standards has received a request from the inventor of one of these devices for a thorough test of the appliance. Numerous requests have also been received from other sources for information regarding the safety and efficiency of these appliances. A series of tests was made, therefore on different samples of gas-saving devices to determine the amount of carbon monoxide produced, as well as the effect on the efficiency of burner operation. The burner used in these tests was a regular front burner of the star type. It was 1⅜ in. below the top of the grid, the average distance in stoves used with manufactured gas. The burner was adjusted to average practical conditions. The flame was of medium hardness, such as is generally considered a good type of flame. Efficiency tests were made and the products of combustion were analyzed with the burner alone, and with each of the gas-saving devices that are shown in Figure 1. Nos. 1 and 2 are made of cast iron, No. 3 of pressed steel, and No. 4 of soapstone on a steel frame. A top view of the burner with a gas-saver in place is also shown in Figure 1.

No Justification for Exaggerated Claims

Table No. 1 gives the results of the series of tests made when the distance from burner to utensil was 1⅜ in. The values of efficiency obtained at different rates of consumption, as shown in table No. 1, are plotted in Figure 2. This figure shows clearly that there is no justification for the exaggerated claims of economy made for any of the gas-saving devices tested. At the smaller rates of consumption (slower rates of heating) gas-saver No. 2 shows, however, an appreciable increase of efficiency, but this apparent

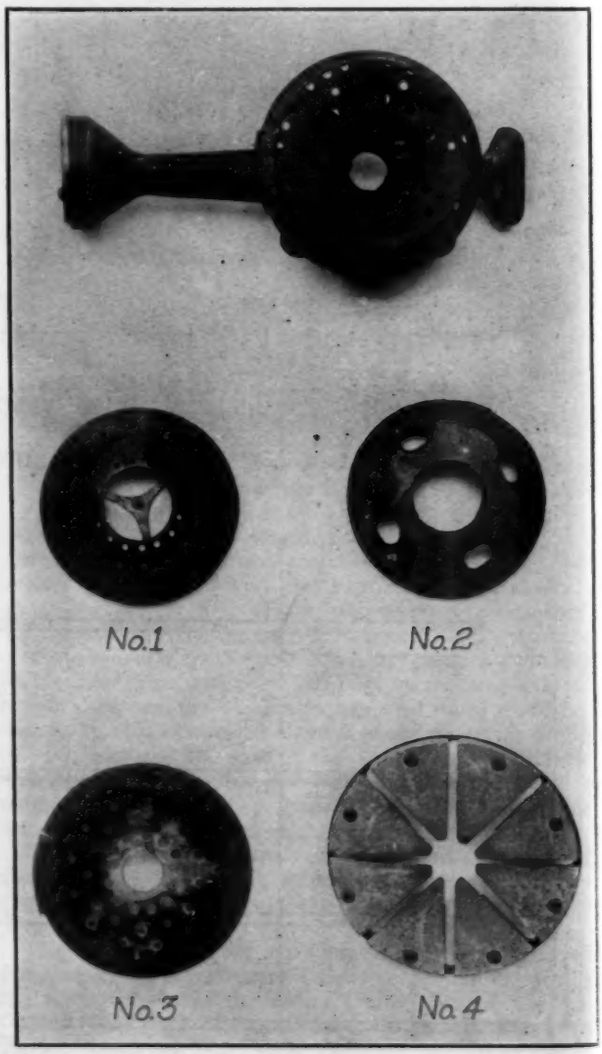


Figure 1—Gas-Saving Devices Tested and Burner Used, with a Gas-Saving Device in Place

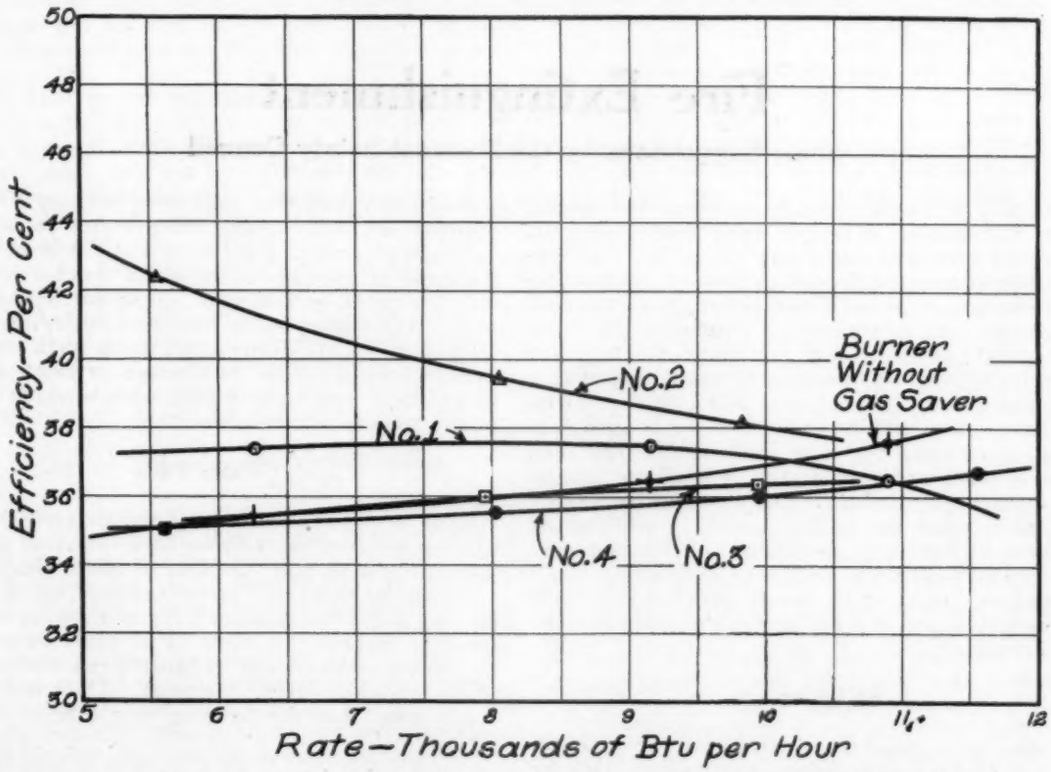


Figure 2—Efficiency Tests of Gas-Saving Devices; Burner 1⅜ Inches Below Top of Grid

advantage is completely offset by the odor given off and the large amount of carbon monoxide produced. Referring to table No. 1, and remembering that 0.04 per cent carbon monoxide in the atmosphere is the maximum amount that should be tolerated, even for an hour or two of exposure, it is readily calculated that the concentration in an unventilated room of ordinary size soon becomes very dangerous and unhealthy, if any of the gas-saving devices are operated for a short period of time. If several gas-savers are used at the same time the hazard become extremely acute. Notwithstanding the fact that these tests were made in a large and well-ventilated room, the persons making the tests experienced severe headaches.

Claims were made by the makers of gas-saver No. 4 that this device would retain heat and thus continue a cooking process long after the gas is turned off. In order to test the validity of this claim two quarts of water were heated to boiling, the gas turned off and the temperature observed over a period of twenty minutes, both with gas-saver No. 4 on the burner and with burner alone. Since the temperature of the water and the room temperature were the same in each case the amounts of heat radiated from the water in the twenty-minute period were equal. Any difference in temperature in the two tests at the end of this period must, therefore, have resulted from heat imparted to the water by the gas saver. The temperature at the end of the period was found to be 10 deg. higher with gas-saver No. 4 than with the burner alone. This indicates that 41.7 B.t.u. (temperature difference multiplied by weight of water) was given up to the water by the gas-saver. A further test was made starting with the gas-saver cold and the resulting efficiency was 30.7. The difference between the amount of gas required to heat to boiling where the tests were begun with the device cold and with the device hot is the amount of gas required to heat the gas-saver. This amount was 208 B.t.u. Thus the amount of heat required to heat this device far exceeds that imparted to the water after the gas is turned off, so that the tests show its use results in waste rather than economy.

Results of Other Tests

Another series of tests was made with each gas-saver, when the top of the grid was 2½ in. from the burner, in order to determine the effect on the efficiency and completeness of combustion when the devices are used on stoves with low-set burners. The results of the efficiency tests and the amounts of carbon monoxide produced are shown in table No. 2. The efficiencies obtained were in every case higher than that obtained with the burner alone under these conditions, but the analyses of the products of combustion show that, except with No. 4, the rate of carbon monoxide liberation is just as dangerous. No. 4 did not liberate carbon monoxide at this position and the efficiency was slightly higher than that obtained with the burner alone.

Table No. 1—Tests of Gas-Saving Devices with Regular Front Star Burner

48 Ports—No. 40 Drill
Utensil 1⅜ in. from Burner

Burner Used without Gas-Saver—			
Rate, B.t.u. per hour	6,255.0	8,920.0	11,040.0
Efficiency, per cent	35.5	36.5	37.6
CO produced, cubic feet per hour	0.0	0.0	0.0

(*Continued on page* 534.)

Fire Extinguishment

Some Suggestions by the National Safety Council

Practically every fire can be extinguished within the first five minutes if proper equipment is brought into use, by men who know how to use it. Successful extinguishment of fires does not, in general, require elaborate, expensive equipment: the essentials are the right kind of equipment (suited to the existing hazards), kept in good condition, in the right place, with men who know how to use it, and that it be brought into use immediately after the fire starts.

No matter how well equipped a plant is with fire-fighting apparatus, nor how well trained the men may be to handle this apparatus, it is of the utmost importance that the public fire department be notified immediately when fire is discovered, in addition to the efforts with private equipment. When men rely wholly upon their own ability to extinguish small fires, serious losses often result which could have been prevented had the public fire department been notified promptly.

Sprinklers

The automatic sprinkler is considered the most important of all fire-extinguishing apparatus. The design and installation of splinkler systems cannot be described in this brief article.

When painting or calcimining the ceiling or overhead piping it is advisable to cover each sprinkler head with a small paper sack, care being taken to remove such sacks when the work is done. Paint may so affect the sensitiveness of the solder that heads will not operate except at a much higher temperature than intended.

Water shut off from sprinkler pipes is the most frequent cause of unsatisfactory control of fire by automatic sprinkler systems. Inspections often reveal that the control valves are closed and that therefore the sprinklers would be practically valueless in case of fire. A safeguard against this contingency is to seal or strap the water control valves in open position; this will tend to prevent malicious or careless closing of the valves. An electrical signaling device which, whenever the normal position of any valves is disturbed, will automatically signal a central control station, is also an efficient safeguard against closed valves.

Another very serious condition which often results in the failure of sprinklers efficiently to control a fire is caused by the piling of stock and building of shelving and partitions too close to the sprinkler heads, so that they obstruct the proper distribution of water over the surrounding area. At least twenty-four inches clear space should be maintained below the sprinklers so that an effective spray action of the heads will be possible.

Hose

It is almost impossible to tell good from bad rubber-lined hose when it is new, either from its appearance or by putting it under pressure. It is recommended therefore that only hose bearing the label of approval of underwriters' laboratories be purchased.

The high cost of good hose and the importance of its being in good condition at all times demand that it be given the best of care. Hose should not be kept in a pump house, boiler house or other warm place, as rubber quickly deteriorates under such conditions. Where hose is folded on shelves or racks it should be changed from time to time with bends at different points to prevent cracking.

Water Pails

Cone or round bottom pails are preferred by many, as they are less likely to be used for other purposes. The flat-bottom pail (bucket) of about three gallons capacity is, however, recommended, for if an employee carries two pails to a fire he may set one down while he empties the other. Fire pails, water barrels and water casks should be painted red with the word "Fire" in white letters on them. Their use for purposes other than fire-fighting should be strictly prohibited.

Soda-Acid Extinguishers

The soda-acid extinguisher in common use employs a solution of about a pound and a half of bicarbonate of soda to two and a half gallons of water, with an inner container of approximately four ounces of sulphuric acid. These are made in the "loose stopple" and "break bottle" types. The latter are especially adapted for railroad and service where the swaying and rocking would splash the acid over into the soda solution thus rendering it useless. By inverting the extinguisher, or breaking the bottle the acid is emptied into the soda solution, forming a gas the expansion of which forces out the solution under considerable pressure.

These extinguishers are valuable in free-burning fires where there is much draft. They are also of value in fighting fire on ceilings or between walls where it cannot be reached by fire pails. Sizes larger than two and one-half gallons capacity are not recommended because of the inconvenience in handling.

Soda-acid extinguishers must be protected against freezing and for this reason are of little value in locations where protracted cold spells prevail unless they are kept heated. Cabinets (felt or asbestos lined) containing a small electric light beneath the extinguisher will be adequate protection against the cold. A red glass in door of cabinet, through which light may be seen, will serve to marke the location of the extinguisher box. Calcium chloride cannot be used in the soda-acid extinguisher, as it reacts with the soda. The use of salt is not advisable because a cold extinguisher of this type does not operate efficiently, and also because the salt will crystallize on the sides and may corrode the extinguisher. These crystals are apt to clog the outlet, thus causing the weakened tank to explode when used. The soda solution also

may form crystals on the inside wall of the extinguishers and for this reason they should be examined occasionally to see that this condition does not exist.

The acid in the extinguisher constantly absorbs water and in time enough water may be absorbed to cause the acid bottle to run over, and acid dropping into the tank will eat into the side of tank around water line. It is advisable, then, that new acid be placed in the bottle once each year when extinguisher is recharged.

Soda-acid extinguishers should be recharged at least once a year. They should be emptied by inverting and playing through the hose as if on a fire, to insure the operation of the extinguisher and also to give employees an opportunity to see how they are operated. Before recharging, the hose and the extinguisher tank should be thoroughly washed.

Carbon Tetrachloride Extinguishers

Carbon tetrachloride when heated to about 200 deg. Fahr. is transformed into a gas heavier than air. When thrown on a fire the gas surrounds the fire area, keeping out the air and oxygen, and tends to smother the fire. As the extinguishing value of carbon tetrachloride depends on the smothering effect of the gas, these extinguishers are of little value where there is a wind or other air current which will carry the gas away from the fire. A fire in freely-burning material such as wood or paper, quickly creates a strong draft of air inward and upward, and such fires are difficult to extinguish with carbon tetrachloride except when they are very small. This type of extinguisher is useful, however, for reaching fires in partitions and other concealed spaces.

Extinguishers containing this fluid are of particular value for electric fires, as the carbon tetrachloride is a non-conductor of electricity and will not injure electrical apparatus. The stream may be directed on the commutator of a dynamo without danger to operator or dynamo. Carbon tetrachloride extinguishers are recommended for all electric cranes, at motors (wherever located) and at convenient points in power houses.

Carbon tetrachloride does not deteriorate with age, nor freeze at usual temperatures, and if mixed with a small per cent of certain other ingredients will withstand a temperature of 50 deg. below zero.

Although there is question whether or not the gas itself is harmful, there are instances where persons have been overcome while using the extinguishers.

Carbon tetrachloride extinguishers should be tested periodically to see that the pump has not gummed, which would interfere with its free action. It is suggested that twice each year all extinguishers be tested by discharging (by pumping) all the contents into a pail. The pump should then be operated vigorously to make sure that it works freely, and that the packing is flexible. Then the fluid should be replaced, a little being added to fill the tank. Particular care must be taken that no water becomes mixed with carbon tetrachloride used in extinguishers, as water will reduce its non-conductivity.

Sawdust and Soda

A mixture of sawdust and bicarbonate of soda (about ten pounds of soda to a bushel of sawdust) is a valuable extinguishing agent in fires of inflammable liquids. This mixture floats on the surface of the burning liquid, shutting off the oxygen supply and smothering the fire. It is much more effective than sand in putting out fires of inflammable liquids. Unless foam extinguishers are provided, a supply of sawdust and soda should be kept on hand at all containers of varnishes, lacquers, oils, paints, and similar liquids. The principal point in its favor is its low cost.

Suggestions

The efficiency of fire-fighting apparatus depends largely upon its proper use. Unless the hose stream, the extinguishing fluid, sand, or sawdust is directed on the base of the fire, its value is lost. Employees should be instructed in the proper use of all equipment, and given an occasional opportunity of seeing it in actual operation.

Fire extinguishers and fire hose racks are sometimes found inaccessible on account of material in front of them. It is also a fact that the employees in many plants do not know where the fire apparatus is located. To be of value such apparatus must be put into use immediately after fire is discovered. It should, therefore, be placed prominently and kept easily accessible—if not, it might as well not be provided at all. Some plants place extinguishers along center aisles with a red mark on floor or around column or post on which extinguisher is hung, and often with a red light over it at night.

Inspection should be made of all fire-fighting apparatus including extinguishers, fire barrels and pails, hose, hydrants and valves, at least once each week. Many of the large companies require such an inspection every day. A competent man should be assigned to this inspection service and should periodically make a complete and detailed inspection of all apparatus and equipment, keeping a record of the inspection on a blank for that purpose.

Purposes of inspection are to determine (a) what possibilities of fire outbreak can be eliminated; (b) whether fire-fighting equipment and apparatus is in good condition and accessible.

It has often been the case that extinguishers were found empty when most needed. In order to know at a glance whether an extinguisher has been tampered with through mischief or maliciously, some companies use a car seal to fasten handle of extiguisher to hanger bracket. These seals are easily broken, and therefore do not interfere with use of the extinguisher. They are, however, not replaceable and hence enable the inspector to know whether extinguishers have been disturbed for any reason.

Invites Association to Meet in Louisiana

During the session of National Natural Gas Association in Kansas City, representatives of Monroe extended an invitation to that body to hold its next session in the Louisiana city. A telegram which detailed the various things of interest to be found in the Monroe field and embodying the invitation was sent to William B. Way, secretary of the National Natural Gas Association.

Gas Heating Development on Pacific Coast

(*Continued from page* 529.)

return the air from the building, or both, in proportions as desired.

The air is heated by two batteries of twelve gas furnaces each which have a total maximum consumption of 6,000 cu. ft. of gas per hour.

During the summer months the blowers, operated without the furnace, will be used as ventilators.

The illustrations shown clearly set forth the floor plan of the south wing, as well as equipment of the furnace and blower house of this wing. Both plan and equipment are duplicated in the north wing.

One of the outstanding features of this plant lies in the fact that considerable heat, absorbed by the concrete, is radiated from the floor, thereby accomplishing the most difficult task of keeping the heat "down" where it is most needed; and the floor itself is kept pleasantly warm, which in itself insures the comfort of visitors walking about the building.

It is, therefore, with a feeling of keen satisfaction that we survey the accomplishments of the gas industry during the past five years, as well as our own progress here on the Pacific Coast. However, our own work has just begun; there still remains much to be done, much to accomplish, and I feel quite safe in stating that the coming years will see greater happenings as the gas industry—"Gas the Modern Fuel"—marches triumphantly on, step by step, with the onward trend of progress.

Bureau of Mines Issues New Publications

Bulletin 200, "Evaporation Loss of Petroleum in the Mid-Continent Field," by J. H. Wiggins. 1922. 113 pp., 7 pls., 61 figs.

Technical Paper 258, "Production of Gasoline by Cracking Heavier Oils," by E. W. Dean and W. A. Jacobs. 1922. 55 pp., 5 figs.

Technical Paper 268, "Preparation and Uses of Tar and Its Simple Crude Derivatives," by W. W. Odell. 1922. 79 pp., 4 pls., 11 figs.

Technical Paper 282, "Analysis of Detonating and Priming Mixtures," by C. A. Taylor and W. H. Rinkenbach. 1922. 33 pp., 1 pl., 2 figs.

Technical Paper 285, "Compressed-Air Illness and Its Engineering Importance, with a Report of Cases at the East-River Tunnels," by Edward Levy. 1922. 48 pp., 13 pls., 10 figs.

Note.—Only a limited supply of these publications is available for free distribution, and applicants are asked to co-operate in insuring an equitable distribution by selecting publications that are of especial interest. Requests for all papers cannot be granted. Publications should be ordered by number and title. Applications should be addressed to the Director of the Bureau of Mines, Washington, D. C.

The Importance of Service

At the recent gas-section convention of the Empire State Gas and Electric Association held in Rochester, Joseph Lucena, superintendent of the Syracuse Lighting Company, Syracuse, N. Y., made a statement that hight well be placed on the desk of every gas department executive in the entire country. During the discussion Mr. Lucena said in part:

"Ostensibly we are selling gas; actually we are selling gas plus service, and service is the more important element so far as our relations with the public are concerned.

"The quality of the gas we deliver, our rates and our capital issues, are regulated by the Public Service Commission. The service we give depends upon ourselves and by it the public judges. If we do not satisfy and please our customers from the time they come to our office to sign an application, to the minute they pay their final bills, we fail in our duty. We must do more than deliver an unfailing supply of gas. We must make our customers regard us as their friends."

Test of Gas-Saving Device

(*Continued from page* 531.)

Burner Used with No. 1 Gas-Saver—			
Rate, B.t.u. per hour	6,260.0	8,910.0	10,880.0
Efficiency, per cent	37.4	37.5	36.5
CO produced, cubic feet per hour	0.80	0.93	0.79
Burner Used with No. 2 Gas-Saver—			
Rate, B.t.u. per hour	5,440.0	8,040.0	9,820.0
Efficiency, per cent	42.4	39.5	38.2
CO produced, cubic feet per hour	0.56	0.99	0.89
Burner Used with No. 3 Gas-Saver—			
Rate, B.t.u. per hour	5,600.0	7,940.0	9,840.0
Efficiency, per cent	35.1	36.0	36.4
CO produced, cubic feet per hour	1.05	1.07	0.93
Burner Used with No. 4 Gas-Saver—			
Rate, B.t.u. per hour	5,585.0	8,025.0	9,950.0
Efficiency, per cent	35.1	35.6	36.0
CO produced, cubic feet per hour	0.57	1.66	1.99

Table No. 2—Tests of Gas-Saving Devices with Regular Front Star Burner

48 Ports—No. 40 Drill
Utensil 2½ in. from Burner
Rate of Consumption, 10,000 B.t.u. Per Hour

	Without Gas-Saver	No. 1	No. 2	No. 3	No. 4
Efficiency, per cent	30.2	34.4	36.6	32.1	33.0
CO produced, cubic feet per hour	0.0	1.05	1.03	1.02	0.0

A summation of the results of these tests shows that no marked increase of efficiency can be expected where these devices are used. In cases where the burners are far below the grid or where the pressure drops far below that for which the burner is adjusted some increase in efficiency will result, but this increase is in no case very large and can in no way justify the claims of economy made by the makers. Furthermore, these devices break up the flames as they leave the ports, mix the flames into one mass and by so doing exclude to a large extent the supply of secondary air necessary for complete combustion. The poor aeration of the flame results in rapid liberation of carbon monoxide in sufficient quantity to be a positive menace to health.

As the Journal Views It

Rate Controversy Always with Us

The question of rates is always going to be a troublesome one no matter what a company may charge for its service. This is true because of the system of political economy under which this country is governed. But that does not mean that the rates we secure for the product we produce will be inadequate. On the contrary we are of the opinion that there is an awakening public interest in all public utilities that will dominate any politician who may see in an attack on a public service company a vehicle on which to ride to success.

One reason for rate troubles in the past has been the lack of information regarding utilities. Executives have only themselves to blame for this condition, for if those of past generations had been farsighted enough to explain the workings of an industry that is so closely linked with the success of the people as ours, then what to-day is a mystery would have been a matter of common knowledge.

We believe that the gas industry has suffered from this attitude but, after all, it has been its own victim and while it is true that the public has suffered because of the condition that we have been placed in, nevertheless we have been the greater sufferers.

Gas company officials who are reactionary in any way, and no matter what their positions may be, must be driven from the industry. We believe that this type is few and far between, but there are some who have personal axes to grind exactly as have the political self-seekers and they do not always keep in mind that the gas industry is greater than any individual or group of individuals and that the good of the industry must come first at all times. That is the reason that we are subjected to attacks, although, of course, some newspapers find that playing to the gallery is a great circulation builders. But this class of attack is easily detected and it is surprising how quickly the public becomes tired of such tricks.

But withal the rate question is always going to crop up and cause annoyance.

The Wrong Way to Enforce a Rule

Company rules are a splendid thing to have and, of course, must be enforced if an organization is to function successfully, but there must be some discretion used if the rules are not to defeat their aim. This was very clearly brought out recently in the case of a large organization which has prided itself on the efficiency of its personnel. This company had a rule regarding payment in advance for certain work on consumers' premises. One of its patrons, a man who had been on the books for nearly twenty years, needed this work done. He made application in the usual manner and was assured that the work would be started and completed within a given time.

Acting on the promise made by the clerk with whom he talked this man arranged his plans accordingly. Great was his surprise therefore to receive on the day the work was to have been started a letter stating that the work would be started on receipt of a check for the amount involved. He paid the bill at once, even though it meant a loss of money to him because of the delay.

Now this man is not a chronic kicker; in fact, during the entire time that he has been a customer of the company in question he has never disputed one charge or regulation that has been enforced. But he was aroused by what appeared to him, and to the casual observer, to be a ridiculous rule ridiculously enforced. Probably this company was dead right in establishing the rule but how about an exception or two in the case of preferred customers? And not only that, but the manner of enforcing the demand was not such as to create good-will. If such a rule is necessary it would be an excellent idea to inform the clerks who come in contact with the public so that there would be no misunderstanding and so that promises would not be made only to be broken later.

We feel that the officials of this company cannot be to strongly condemned for they have given the entire gas industry a black eye and that is an almost unforgivable offense. We want every friend we can get and unless each company sees to it that all employees do their part then we are alienating our patrons in place of winning them.

In passing it might be said that this man is a lawyer and during his career probably will have dealings with the gas company in the practise of his profession. We would hate to be the officials of that company if he ever gets one of them on the stand.

are not going to draw any moral because we believe that the lesson is plain enough but we think that any company that is in doubt the enforcement of its rules and regulations might well jack up the personnel.

Developments of Gas Technology

Important Information Gathered from All Parts of the World

By ISMAR GINSBERG, B.Sc., Chem. Eng., Associate Editor

Liquid Hydrocarbons from Gas

The washing out of the vapors of liquid hydrocarbons contained in illuminating and other industrial gases has been accomplished generally by means of heavy oils and paraffine oil. In the German journal, *Gas und Wasserfach*, 65, pages 33 to 34, there is described a process of absorbing these hydrocarbons in cresol. This solvent has a much greater absorptive capacity than either heavy oil or paraffine oil and because of its low specific heat, a considerable saving in steam is effected. The conversion of a washing installation, now using heavy oil, to operate with cresol, is accom-

Coal Tar for Highroads

When it does not pay to work up coal tar into more valuable products it is sometimes used on roads for laying the dust. It is a decided mistake to use the tar in the crude condition for this purpose. The crude tar, containing water, naphthalene, phenolic oils, etc., is not only too valuable a product to be used in this manner, but it is not at all suited for this purpose, due to inherent properties. Unnecessary ballasting must be resorted to because of the fluid character of the tar, and considerable difficulty is encountered in spraying it on the roads, due to its variable condition. It is much more advisable to use prepared tar for this purpose instead of crude tar, even though the price of the latter may be a little less than that of the former. Further details regarding the investigation made into this matter by the Wirtschaftliche Vereinigung Deutscher Gaswerke A. G. will be found in *Gas und Wasserfach*, 65, page 48.

Moisture in Fuel

In drying the fuel in the ordinary drying oven to determine the moisture that it contains, the percentages found are always high, due to the fact that volatile products, particularly anthracene, which are formed in the course of the drying process are evolved as well as water. In the Italian Italian journal, Ann. chim. analyt. appl., 4, pages 7 to 8, there is described a method of conducting this analysis, which avoids this error and which because of the ease of its application and the accuracy of results obtained by its use is given here in some detail.

About ten to fifteen grams of the fuel are placed in two weighed 100-c.c. flasks. The mouths of these flasks are closed with corks, bored through with two holes, through which the inlet and outlet tubes for the gas used in the analysis are inserted. The flasks are placed in a water bath, which is kept at the boiling point. Dry hydrogen gas is introduced in a slow stream through the system for one and one-half to two hours. The moisture-laden gas passes through a drying tube, which has been weighed before use and which is weighed again after the analysis. Before entering the drying tube, filled with calcium chloride, the gas first passes through a vertical tube, which acts as an air cooler. In this tube the anthracene is crystallized. If there is no deposit of anthracene in this tube, then the loss in weight in the drying flask must equal the gain in weight in the calcium chloride tube. Otherwise, the difference between the two will give the amount of anthracene evolved, the true percentage of moisture being given by the increase in weight of the calcium chloride tube.

Gas Firing of Kettles

A detailed article, giving the description of the methods used in heating kettles by gas and the comparative data on efficiency, temperature variation, gas consumption, life of heating apparatus, etc., is published in **Stahl und Eisen**, 1922, pages 215 to 221.

Gas Production in Upright Retorts

The process described in German Patent No. 346,941 relates to the production of illuminating gas in upright retorts or chambers under continuous operation. The coal is not fed in a constant stream to the gasification chamber, but only in intervals of thirty minutes each. The upper part of this chamber is heated to a temperature of about 1,200 to 1,500 deg. Cent., which is somewhat greater than the customary temperature used in gas retorts at that point, while the lower part is heated simultaneously to a temperature which varies from 1,600 to 1,800 deg. Cent. The operation of the apparatus in this manner permits the use of various coals, while the former method of operating the retorts made it necessary to use only certain English gas coals.

Gas for Haynesville, La.

The people of Haynesville, La., recently celebrated the arrival of gas for general use. A four-inch gas line to Haynesville from the six-inch main from the Raymond gas well in Webster Parish was completed somewhat later than the middle of May. The line runs from one side of the town to the other with laterals in every street. The work was supervised by H. B. Schoffield, of Shreveport, who opened an office in Haynesville during the operations.

The gas was turned on at 8 o'clock on the evening of May 25. Mayor Norton applied the torch to a huge gas jet for a gathering of officials of the Haynesville Gas Company and over 500 other residents of the town. The flames rose high in the air and illuminated the city for more than an hour before the gas was finally turned off. The mains will be filled immediately and construction of the entire system will be completed in a few more weeks.

The Raymond well has a capacity of 45,000,000 cu. ft. of gas with 1,200 lb. rock pressure which assures an abundant supply of gas for Haynesville.

Public Utilities Securities Market Report

Prices of Representative Gas Bonds

(Quotations furnished by The National City Company)

Company	Issue	Maturity	June 8, 1922 Bid	Asked
American Lt. & Trac. Co.	Five Year 6s	May 1, 1925	107	107½
Brooklyn Union Gas Co.	First Consol. 5s	May 1, 1945	96	97
Columbia Gas & Elec. Co.	First 5s	May 1, 1927	94½	95
Consol. Gas, Elec. Lt. & Pr. Co. of Baltimore	First Ref. 7½s	Dec. 1, 1945	108	108¾
Consol. Gas, Elec. Lt. & Pr. Co.	General 4½s	Feb. 14, 1935	90	90½
Consol. Gas Co. of New York	Sec. Conv. 7s	Feb. 1, 1925	121½	122
New Amsterdam Gas Co.	First Consol. 5s	Jan. 1, 1948	80	81
Denver Gas & Elec. Co.	Gen. (now 1st) 5s	May 1, 1949	90	92
Detroit City Gas Co.	Gold 5s	Jan. 1, 1923	99¼	100
Equitable Illum. Gas Lt. Co. of Philadelphia	First 5s	Jan. 1, 1928	98½	99½
Hudson County Gas Co.	First 5s	Nov. 1, 1949	90	91
Laclede Gas Light Co.	Ref. & Ext. 5s	Apr. 1, 1934	92	92½
Louisville Gas & Elec. Co.	First & Ref. 7s	June 1, 1923	100	101
Michigan Light Co.	First & Ref. 5s	Mar. 1, 1946	89	90
Milwaukee Gas Light Co.	First 4s	May 1, 1927	92	92¾
Pacific Gas & Elec. Co.	Gen & Ref. 5s	Jan. 1, 1942	90¾	91¼
Pacific Gas & Elec. Co.	First & Ref. 7s	Dec. 1, 1940	106	107½
Cal. Gas & Elec. Corp.	Unif. & Ref. 5s	Nov. 1, 1937	95¾	96¼
Peoples' Gas Lt. & Coke Co.	Refunding 5s	Sept. 1, 1947	90	90½
Chicago Gas Lt. & Coke Co.	First 5s	July 1, 1937	94½	95½
Portland Gas & Coke Co.	First & Ref. 5s	Jan. 1, 1940	88	90
Seattle Lighting Co.	Refunding 5s	Oct. 1, 1949	85	87
Southern California Gas Co.	First 6s	Nov. 1, 1960	97	100
Utica Gas & Electric Co.	Ref. & Ext. 5s	July 1, 1957	89½	91
Washington Gas Light Co.	General 5s	Nov. 1, 1960	94	95
Western States Gas & Elec. Co. of California	First & Ref. 5s	June 1, 1941	89	90½

Rochester G. & E. Announces Extensive Program of Extensions and Improvements

The coming season's replacement work, enlargements and extensions of mains contemplated and scheduled by the engineering department of the Rochester Gas & Electric Corporation, Rochester, N. Y., will total about 47,000 lineal feet, or nearly nine miles. It has been estimated that the total cost for this improvement and betterment program will call for the expenditure of between $160,000 and $170,000.

In addition to this expenditure it is planned to install this coming season of from 2,000 to 2,200 new service connections.

Rochester is a thriving and growing city and new subdivisions are constantly being made, the lots formed selling readily, and in consequence extensive home building following.

Rochester is way above the average city in its class in the number of highly-paid expert and technical workers employed. It is from this class that real home makers emanate. The Rochester Gas & Electric Company thoroughly believe in entirely humanizing the relation between the central station and patrons and constantly is on the alert to better their service and to render valuable assistance to make living conditions in Rochester more pleasant.

Plans Increase in Capital Stock

Watertown, N. Y.—John N. Carlisle, president of the Northern New York Utilities, Inc., Light & Power Building, Watertown, N. Y., has called a special meeting of the stockholders of the corporation, at which time a proposition to increase the capital stock of the company from $8,000,000 to $14,000,000.

Colorado Incorporations

The Templeton Oil & Gas Company, $50,000. Home office, Walsenburg. Incorporators, H. C. Summers, D. B. Summers, C. L. Templeton.

The Garcia Oil & Gas Company, $250,000: Home office, Trinidad. Incorporators: Joseph Cox, Andrew Putaturo and B. M. Cawley.

The Platte Valley Oil & Gas Company, $50,000. Home office, Denver. Incorporators, Raymond G. Campbell, William A. McClintock and Carl L. Lercher.

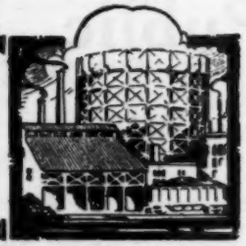
Authorized to Issue Stock

Boston, Mass.—The Public Utilities Commission has authorized the Boston Consolidated Gas Company to issue 60,000 additional shares of preferred stock, the proceeds to be used in purchasing the East Boston and the Newton & Watertown gas companies. Authority for the purchase has been granted. The stock would have a par value of $100 and would bear interest at 6½ per cent, and the company would have the privilege of redeeming it at any time at $105 a share.

To Redeem Bonds

San Francisco, Cal.—The Western States Gas & Electric Company has been authorized by the Railroad Commission to sell $207,000 in 6 per cent notes for not less than 92 per cent of their face value, with accrued interest, for the purpose of redeeming first mortgage bonds of its subsidiary, the American River Electric Company.

NEWS OF THE GAS INDUSTRY



Natural Gas Company's Board and Officers Elected for the Coming Year

Monroe, La.—The Natural Gas Company's board of directors and officers for the ensuing year have been elected at a formal meeting and contain a number of changes those who ruled the affairs of the company in the past.

Samuel D. Hunter succeeds his father as president of the Natural Gas Company. J. H. Trousdale was elected vice-president as the successor to Samuel Hunter, who served in that capacity prior to the election. Henry Briggs was elected secretary and J. D. Pribble, treasurer.

The board of directors consists of E. N. Florsheim, Samuel D. Hunter, J. H. Trousdale, George Weaks, Henry Briggs and J. D. Pribble. Mr. Florsheim succeeds S. S. Hunter, of Shreveport, deceased.

The Natural Gas Company had its origin in the merger of the Ouachita Gas Company and the Monroe Gas Company. Its function, at present, is to supply Monroe, La., with gas.

Wyoming Gas Extension

Lander, Wyo., is enthusiastic over the fact that the Producers & Refiners Corporation promises to extend its gas supply from Riverton to Lander, the work to be completed this summer.

This natural gas is obtained from the Sand Draw field and it is now supplying Riverton with splendid service.

Oil Refining Course

Dr. E. P. Schoch, professor of chemistry of the University of Texas, is contemplating giving a four weeks' course this summer on the fine points of oil refining.

Dr. Schoch has been actively engaged in this work for years and is well qualified to expound the tenets which make a good refining engineer and, as there are myriads of young men interested in the subject, it ought to pay all concerned to join the doctor in this laudable enterprise.

Timely and Suggestive Advertising

If you have overlooked doing so, perhaps the following information will give you an idea.

Within the daily papers the following advertisement is carried:

Now is the time to fill you coal bin with

GENUINE GAS COKE

for Next Winter.

Remember the coal strike may make fuel scarce later on.

GENUINE GAS COKE

is smokeless, clean, economical —equal to anthracite.

Phone Coke Department
Main 4000

THE DENVER GAS & ELECTRIC LIGHT COMPANY

Oil Engineering Promoted

Casper, Wyo.—A. W. Peake, who was the chief engineer of the Midwest Refining Company under R. S. Ellison, vice-president, has been advanced to the newly created position of general superintendent. As general superintendent Mr. Peake will have jurisdiction over all the fields in which the Midwest operates.

Athol Gas Employees Hold "Get-Together"

Athol, Mass.—The May meeting of the employees of the Athol Gas & Electric Company was in the nature of a get-together affair at the Y. M. C. A., on the night of May 22, when 35 from the Marlboro Electric Light Company and from the Hudson Gas Company, as well as ten from the Gardner Company and four from Boston were in attendance. A dinner was served after which there were readings by Fred Walker, banjo and piano selections by Edward Schmidt and Frank Dexter. P. L. MacDonald presided and the speakers were Fred Butler of Greenfield, on "The Gas Industry"; Secretary J. F. Hayden of the Board of Trade of Athol, on "Athol—Its Plans for the Present and the Future"; M. B. Webber of Boston, assistant general manager of the Athol Gas & Electric Company, on "The Gas and Electric Industry"; P. L. MacDonald, on "Our organization and This Association"; R. H. Jameson, local manager of the Marlboro Electric Company, on "What a Public Utility Means to Any Community"; Ray B. Smith of Gardner, local manager of the Gardner Gas, Fuel & Light Company, on "Why I Would Rather Be in the Gas Service than Any Other Business."

Recent Gas Decisions

Schenectady, N. Y.—The appellate division, third department, has recently handed down a decision permitting the city of Schenectady and village of Scotia, N. Y., to appeal in their gas rates action. The Public Service Commission, State of New York, has permitted the Adirondack Power & Light Corporation a rate of $1.25 per thousand cubic feet, but the corporation wishes permission to charge $1.50 per thousand cubic feet. The city of Schenectady and the village of Scotia will appeal seeking relief from this latter charge.

New Gas and Oil Map of Pennsylvania

Announcement has been made by the Secretary of Internal Affairs, James F. Woodward, that a new gas and oil map showing the anticlines and the synclines in the Greensburg, Pa., quadrangles has been completed by the Bureau of Topographic and Geological Department of Internal Affairs, Harrisburg, Pa. The quadrangle lies east of Pittsburgh in Westland and Allegheny Counties. It contains 227 square miles and is 17¼ miles long and 13¼ miles wide. The village of New Texas is in the extreme northwest corner and Dick is in the southwest corner. Greensburg is situated about four miles northwest of the southeast corner of the quadrangle and Saltsburg is three miles east of the northeast corner.

Construction Notes

To Install New Generating Equipment

The Peoples Gas & Electric Company, of Mason City, Iowa, has found it necessary to increase the generating capacity in its water-gas plant and has placed contract with the Gas Machinery Company, of Cleveland, Ohio, for a new 6-ft. water-gas generating equipment complete with linings, mountings, angular reverse steam connections between generator and carbureter having the up and down run steam automatically reversed with the hot gas valves, steam and air meter equipment and blast equipment. The Gas Machinery Company furnished one of the original water-gas sets at Mason City, and the gas send-out has increased to such an extent since the original plant was installed, about fifteen years ago, that additional generating and auxiliary equipment are now required.

Awarded Contract

The Providence (R. I.) Gas Company's plant will shortly be the scene of great activity. The company has awarded a contract to the U. G. I. Contracting Company, of Philadelphia, Pa., for new equipment, which will include two 10-ft. 6-in. U. G. I. high-pressure producers, two U. G. I. waste-heat boilers, dust arresters, producer gas-cleaning plant and other miscellaneous equipment. The installation will be made in conjunction with the Providence company's coal-gas plant.

Carnegie Steel Company to Construct $35,000,000 Plant

A second by-product coke oven plant will be erected by the Carnegie Steel Company, at Clairton, Pa., at a cost of $35,000,000, as announced by the company to double the capacity of the ovens already in use there. An area of sixty-five miles will be covered. Work on the excavation is already under way, the site of the new plant located to join the present plant.

The by-product plant now at Clairton comprises 768 ovens of the Koppers type, with a capacity of twelve tons of coal to the charge, requiring about eighteen hours for the carbonization process, each oven having a capacity of about eighteen tons of carbonized coal per day. These ovens are arranged in twelve batteries of sixty-four each. The new plant will comprise fourteen batteries with sixty-four each, giving the company 1,664 ovens with a total production of 29,952 tons of coal charged a day, or an annual production of about 11,000,000 tons.

The by-products of the coal charged in the Clairton plant are benzol, ammonia sulphate, gas, etc., and the company is said to be working in its laboratories in the perfection of a varnish for special purposes.

The company has completed the laying of a forty-eight-inch gas line, underground, from Clairton to the Homestead, DuQuesne, and the Edgar Thompson works at Braddock, Pa., and through this line the gas from the by-product ovens will be transported for use in the mills named.

Orders Additional Water-Gas Apparatus

The Sioux City (Iowa) Gas & Electric Company is preparing to install an additional nine-foot carbureted water gas apparatus and has placed the order for same with the U. G. I. Contracting Company, of Philadelphia. Included with the apparatus will be one U. G. I. automatic control.

To Erect New Tank in Webster

Webster, Mass.—The Webster & Southbridge Gas & Electric Company has been granted permission by the board of selectmen to erect a tank on Union Street. The erection of the new tank will cost about $50,000 and work will start at once. Superintendent Albert Shaw states that the new tank will tend to supply a better grade of gas to the consumers in Webster and Dudley.

Huge Electrical Machine Shipped

The Westinghouse Electric & Manufacturing Company has shipped to the Pacific Gas & Electric Company for its Mt. Shasta development what is believed to be the largest high-tension oil circuit breaker ever built. The gross shipping weight of the breaker, including oil, is 90,000 lb., or forty-five tons. The net weight of the unit, erected on foundation, is 75,000 lb. The breaker requires 2,000 gal. of oil for each pole and the net weight of the breaker, exclusive of oil, is 30,000 lb.

Increased Water Water-Gas Generating Capacity

The Pennsylvania Power & Light Company, of Williamsport, Pa., has decided to increase its water-gas generating capacity and has placed contract with the Gas Machinery Company, of Cleveland, Ohio, for two 8-ft. 6-in. diameter water-gas generators complete with mountings, firebrick linings, air and steam meters, and auxiliary equipment. The installation of this new water-gas apparatus will enable the Pennsylvania Power & Light Company to take care of the increased demand for gas and continue the excellent service that it has always given in the past.

Additional High-Pressure Producer at Racine

Following the success attending the original installation of U. G. I. high-pressure producers last year at the Racine plant of the Wisconsin Gas & Electric Company, that company has awarded a contract to the U. G. I. Contracting Company, of Philadelphia, Pa., for an additional 8-ft. 6-in. high-pressure producer, with the necessary auxiliary apparatus and parts. It will be recalled that gasmen generally displayed considerable interest in the Racine problem and the success which followed the adoption of U. G. I. producers to heat horizontal through retorts. The installation was made the subject of a paper at the recent Wisconsin Gas Association meeting.

Crofts Elected President of Purchasing Agents' Association

Rochester, N. Y.—At the recent annual meeting and election of officers of the Rochester Purchasing Agents' Association held at the Rochester Club, Edgar R. Crofts, purchasing agent of the Rochester Gas & Electric Corporation, was elected president of the association.

To Determine Solubility of Coke

Work is being done at Tuscaloosa, Ala., by the Bureau of Mines on the standardization of a method for determining the solubility of coke.

Tenth Annual Meeting of the Chamber of Commerce

Washington, D. C.—A clearer view of the extent to which national prosperity in the United States is dependent on European economic conditions is given as a result of the tenth annual meeting of the Chamber of Commerce of the United States, just held in Washington. The main subject for discussion at the convention was, "European Conditions and Their Effect on American Business," with "A Merchant Marine" as a collateral subject. Speakers included President Harding, Secretary of State Hughes, Secretary of Commerce Hoover, A. D. Lasker, chairman of the Shipping Board, Senators Glass and Sutherland and many business leaders.

Julius H. Barnes, of Duluth, was elected president of the chamber for the ensuing year, succeeding Joseph H. Defrees, of Chicago.

The resolutions brought forth by the meeting cover a wide range of subjects in international business relations and in the field of domestic commerce. Among them were the following:

Urging that all necessary measures, including the approval of Congress, be speedily takn to procure for the United States official representation on the Reparations Commission.

Urging that the Government take its place with other nations in the international court of justice.

Emphasizing the importance of speedily developing a plan for the disposal of war claims against the Central Powers and their nationals.

Recommending Government aid to insure maintenance of an adequate privately owed and privately operated merchant marine.

Urging Congress to enact legislation for the Hague rules with such interpretations as may be necessary.

Urging that there be no amendments to the interstate commerce act until there has been more opportunity for the law to be tested, and opposing proposals for repeal of provisions of the law which confer on the Interstate Commerce Commission power to correct intrastate rates.

Deprecating any tendency to reduce the authorized personnel of the army and the navy below the strength conservatively requisite for the preservation of the national safety.

Urging support for the diplomatic and consular services of the Department of State and expressing to the Department of Commerce appreciation of its commercial information services.

Urging provision to allow owners of private property to obtain compensation for damages done by Government vessels.

Investigation by the Government to determine what additional measures should be undertaken to safeguard the large area in the country now subject to destructive floods.

Urging reduction of passport fees and early negotiation of agreements with foreign Governments for reciprocal discontinuance of visa and passport requirements.

Urging support for the National School for Commercial Organization Secretaries.

Expressing conviction that no changes should be made in the Federal Reserve System except such as will add further strength and usefulness to the present plan and will continue existing safeguards against partizanship in direction of service.

Asks Increase in Rates

The Frost Gas Company, of Fredonia, distributing natural gas for domestic and commercial uses in Fredonia, Lily Dale and adjacent towns and territory, has recently applied to the New York State Public Service Commission for an increase in rates. The company is at present operating under a rate of 40 cents per thousand cubic feet and contends this is insufficient remuneration to warrant continued operation. The company appeals for a rate of 75 cents per thousand cubic feet, or sufficient increase to guarantee profitable operation.

Extra Gas Supply Contracted for by Pavilion Natural Gas Company

Mount Morris, N. Y.—A satisfactory settlement of the rate to be charged, and other details of service, etc., has been reached between the officials of the Newfield Gas & Oil Company, Inc., and the Pavilion Natural Gas Company.

J. J. Leighton, of Rochester, N. Y., president and director of the Newfield company, however, states that no agreement for metering has as yet been arrived at between his company and the Pavilion people. The Newfield company has offered to furnish all gas necessary to augment the Pavilion Natural Gas Company's supply for distribution in Mount Morris, Perry, Warsaw and Le Roy, and to install a meter in Mount Morris, the Pavilion company to pay for all gas passing the meter and the Newfield company to stand all leakage up to the meter. This seems to be the most logical plan and the consumers in the community served are hopeful that such an arrangement will soon be adopted.

The Newfield Gas & Oil Company, Inc., has an adequate supply of gas in the Dansville territory to meet this additional service and in addition is going rapidly ahead with plans for drilling in several new wells in the field.

Moves to New Quarters

Fullerton, Cal.—Because of continued growth of this city and contiguous territory, which reflects itself in increased demands for natural gas service, the Southern Counties Gas Company of California has been forced to seek larger quarters. Early this month the local headquarters were moved to 114 North Wilshire Street, in the heart of the local business district.

No city in Orange County has grown as has Fullerton during the post-war period, resulting in increased demands for service on the local utilities. The Southern Counties Gas Company has kept well ahead of the increased demands, however, and has increased its delivery capacity proportionally with the development of the city.

The opening of the new local gas office is in line with the policy of the Southern Counties company in keeping abreast of the growth of the various southern California cities which it serves with high-grade natural gas from local gas and oil fields. J. C. Hayden, residing at Santa Ana, is in charge of the local affairs of the company. Ferdinand R. Bain, of Los Angeles, is president and general manager.

Personal Notes

Donald McDonald Made Secretary

Donald McDonald, general superintendent of the American Meter Company, was elected secretary and a director of the company, at a meeting of the board of directors held May 24. Mr. McDonald succeeds his father, the late William McDonald.

Mr. McDonald started his career as a boy of seventeen in the plant of D. McDonald & Co. in Albany. He has been continuously in the meter business since. now making his headquarters in the general office of the company on Fortieth Street, New York City. He is prominent in the gas industry and has been active in local and national associations for the upbuilding of the industry and the promotion of the use of gas.

LEO A. LAROW, formerly of Cohoes, N. Y., and a graduate of Rensselaer Polytechnic Institute, has recently accepted a position in the engineering department of the Utica Gas & Electric Corporation.

THATCHER B. DUN, president of the Gardner Electric Company and a director of various gas, electric and public utilities in Central Massachusetts, died on May 20, at his home, 51 Glazier Street, following an illness of heart disease, aged 77 years. He also was vice-president and trustee of the Gardner Savings Bank.

N. I. GARRISON, manager of the El Reno division of the Oklahoma Gas & Electric Company, addressed the Oklahoma State Press Association, in convention at Ponca City, on May 13. Mr. Garrison was elected to honorary membership in the association.

EDWARD EHMANN, chief engineer of the Fulton County Gas & Electric Company, Johnstown, N. Y., slashed his right wrist severely while attempting to open the windshield of an Overland sedan at First Avenue and North Main Street. For some unexplained reason the glass shattered and severed an artery. Ehmann drove in his machine to the Nathan Littauer Hospital, where Dr. Claude Bledsoe stopped the bleeding and ordered him to remain there for a few days.

THE BLACKSTONE VALLEY GAS & ELECTRIC COMPANY has declared a $3 semi-annual dividend, payable on June 1, to stockholders of record on May 20. The company also declared a $1.25 quarterly dividend on the common stock, payable on the same date. The common stock has a par value of $50 a share. The general management of the corporation is under Stone & Webster, Inc., of Boston.

John G. McIlhenny Touring Europe

John G. McIlhenny, president of Helme & McIlhenny of Philadelphia, is at present touring Europe. He expects to be away about four months, during which time he will visit Algeria, Africa and other important places of the Mediterranean.

Emerson McMillin, Founder of American L. & T. Co., Is Dead

Emerson McMillin, aged 78, banker and chairman of the board of the American Light & Traction Company, 120 Broadway, died of pneumonia on May 31, in Darlington, his country home at Mahwah, N. J., after an illness of two days. He had been in ill health for two years.

He was born in Ewington, Ohio, and was educated in district schools. He served through the civil war with the Eighteenth Ohio Infantry and the Second West Virginia Cavalry. In 1875 he became interested in coal mining and iron manufacturing. He lived for thirteen years at Columbus, Ohio, and was one of the first presidents of the Columbus Board of Trade. He moved to this city and opened the banking house of Emerson, McMillin & Co., of which he was senior partner at the time of his death.

Mr. McMillin was president of the Detroit City Gas Company. Grand Rapids Gas Light Company, St. Joseph Gas Company, Southern Light & Traction Company, Western Gas Company, San Antonio Gas & Electric Company and San Antonio Traction Company and was vice-president of the Muskegon (Mich.) Traction & Lighting Company. Recently Mr. McMillin was elected president of the Arbitration Society of America. At one time he was president of the New York Academy of Science. He was a member of the Lawyers, Engineers, Bankers, Union League, Army and Navy and National Arts Clubs.

He leaves his wife, a son, Captain Marion S. McMillin; three daughters, Miss Maud McMillin Mrs. Estelle Traverso, of Florence, Italy, and Mrs. Marian McMillin Norton, of Santa Barbara, Cal.

William Kane

William Kane, president of the William Kane Manufacturing Company—and one of the pioneer inventors and manufacturers of gas burning devices, died on Monday, May 22, at his residence, 1227 West Allegheny Avenue, Philadelphia, Pa., after a brief illness. Age 72 years.

In early life, Mr. Kane developed and patented the first dry-joint automatic fire extinguisher. After placing the extinguisher in hundreds of stores and factories, and establishing a record with the fire insurance companies of over 700 fires extinguished without human aid (and with an average loss of less than $10 per fire), which brought him national recognition, his invention was purchased by the General Fire Extinguisher Company.

He developed and manufactured the first circulating gas water heater in the United States. After placing this and other gas-burning devices before the public, he became widely known among gas companies all over the world.

In 1896 he placed on exhibition before the public that which may be said to be the crowning achievement of his many years of tireless efforts in the gas industry—the automatic steam boiler, gas fuel.

Mr. Kane was a man of sterling character and a tireless worker. He was of strict discipline and was actively engaged in directing the affairs of his company up to within a few days of his death.

Gas Heater Demonstration Sale Is Held

Binghamton, N. Y.—The Binghamton Gas Works has just held a Ruud automatic gas heater demonstration and sale. The salesrooms of the company were given over entirely to a tasteful display of the various models, a special deferred payment plan was adopted to stimulate sales during the period of the demonstration, and every effort was made to bring to the attention of the householders of the community the advantages and superiority of the Ruud heater.

F. D. Wharton, factory expert, was present throughout the demonstration and sale, and assisted the sales force of the gas company in explaining and demonstrating the heaters. During the entire demonstration period special salesmen were sent throughout the city, upon receipt of a phone call for information, to enlighten the prospective customer on the exact installation needed for each specific case to obtain the maximum benefits. This service was appreciated by the people and resulted in many sales. A specially written advertisement appeared in the daily papers each day taking up, one at a time, the points covering the superiority of construction of the Ruud heaters. These advertisements were furnished by the Ruud people and were models of terseness and to-the-point advertising.

Much Natural Gas Wasted

Of natural gas we burn usefully in a year fully 800,000,000,000 cu. ft.—equivalent to the heating value of 40,000,000 tons of coal, and something like 8,000,000 families are directly benefited by it in cooking, heating and lighting. But the most significant aspect of this matter is that approximately two-thirds of the gas is used industrially. The history of our treatment of natural gas is a record of wanton waste. Just think of it: in the course of one month gas was allowed to escape unchecked from a well yielding the while 1,000,696,000 cu. ft. of the commodity; and in two months four wells scattered broadcast a total of more than 5,000,000,000 cu. ft. of gas. This dissipation of potential heat corresponded to 250,000 tons of coal, or enough to supply 50,000 households for a year. By recourse to moderate expense for proper casing at our gasoline wells an enormous conservation of this fuel might be effected.—*Scientific American.*

United Light, Fuel & Power Company Report

Coronado, Cal.—The United Light, Fuel & Power Company, operating in this city, reports its operating revenue was $46,741.39 for 1921 and operating expenses $44,650.19, giving a net operating revenue of $2,091.20. Miscellaneous non-operating revenue amounted to $6,855.40.

Interest, rent and other deductions totaled $80.44. The net corporate income for the year was $8,866 16.

The deficit at the beginning of the year amounted to $8,021.81. Miscellaneous additions to surplus for 1921 amounted to $112.60 and miscellaneous deductions were $1,507.19. The accumulated deficit at the end of the year amounted to $550.24.

Wants Audit of Company's Books in Service-Charge Fight

Kansas City, Mo.—The American Gas Company recently announced a service charge of 75 cents to go into effect in the towns of Oswego, Scammon, Galena, Columbus, Cherokee and Altamont, Kan., and these towns have combined to fight against the order being put into effect. The first gun to be fired in the fight is the request of these towns made to the Kansas Public Utilities Commission for an order requiring the company to open its books for an audit, and to require it to furnish an inventory of its property.

Issues Financial Statement

San Francisco, Cal.—The Great Western Power Company of California, operating in various cities in the central and western parts of the State, reports that its operating revenue was $6,404,621.10 and operating expenses $2,671,247.74, giving a net operating revenue of $3,733,373.36 for 1921 operations.

Miscellaneous non-operating revenue amounted to $895,306.21. Interest, rent and other deductions totaled $2,952,463.22. The net corporate income for the year was $1,676,216.35. The surplus at the beginning of the year amounted to $4,123,676.14. Miscellaneous additions to surplus for 1921 amounted to $174,121.20 and miscellaneous deductions were $103,727.48.

The company declared dividends of $610,697.83 during the year, leaving an accumulated surplus at the end of the year of $5,259,588.38.

Bureau of Mines Conducts Tests

Analyses of the gases arising from the fuel bed of a forced draft chain-grate stoker, in tests being conducted at Pittsburgh, Pa., by the Bureau of Mines, shows that large quantities of combustible gases rise from the central portion of the grate, while near the back much excess air and little combustible gas are present.

Surplus of $45,000,000 for New York Edison

The New York Edison Company, which is controlled by the Consolidated Gas Company, has submitted to the Public Service Commission its financial report for the last calendar year. This shows a surplus of $10,329,752 before the payment of dividends, as against a surplus of $6,234,299 in the previous year. Dividends took $5,163,856 of this, leaving an almost equal amount to be transferred to the profit and loss surplus, which on Dec. 31 stood at $45,641,477.

Operating revenue for the year was $42,736,348, as against $33,806,849 in 1920, and its gross income after payment of taxes and before making allowance for charges was $13,400,579, against $8,457,512.

In 1918 the company's gross revenue was $25,329,203, and in 1919 it was $28,793,372. The profit and loss surplus has grown from $36,925,824 in 1918 to $39,537,313 in 1919, $40,475,529 in 1920 and the present more than $45,000,000.

United Electric Light & Power, also controlled by Consolidated Gas, reports gross income of $8,172,733 for last year, as against $6,542,037 for 1920; total income of $2,827,201, against $1,914,631, and surplus of $1,587,931, after charges, against $839,871.

Fuels for the Manufacture of Water Gas

A series of tests on the use of mixtures of coal and coke in the manufacture of water gas is planned by the Bureau of Mines, to be conducted at plants at Davenport, Iowa; Ottawa, Ill., and Beloit, Wis. Wilson J. Dunkley, gas engineer, of the Urbana, Ill., station, will conduct the tests.

Reduction in Industrial Rates

Little Falls, N. Y.—Officials of Little Falls and Herkimer, N. Y., have been notified by the New York State Public Service Commission of a reduction in rates, covering gas supplied for industrials, effective May 15, 1922.

The new rate becomes 95 cents per thousand cubic feet for the first 10,000 cu. ft. consumed, decreasing until a minimum rate of 75 cents per thousand cubic feet is reached for all gas consumed over 500,000 cu. ft. monthly.

Utica G. and E. Social Club Holds Banquet

Utica, N. Y.—The Utica Gas and Electric Social Club recently held its annual banquet and social get-together meeting in the organization's rooms, which had been decorated especially for the occasion.

Among the 200 or more guests present were Mayor Fred J. Douglas, William Kavanagh, president of the Social Club; E. P. Peck, general superintendent of the gas department; A. J. Foley, H. W. Bell and others.

The committee in charge, and to whom the complete success of the entertainment is attributed, was Harold Burke, chairman; A. J. McCormick, Miss Mary Weider, Miss Ella Kelaley and V. W. Gloeckler.

Colorado Coal Production During 1921

During the year 1921 9,141,947 tons of coal were mined in Colorado. This is a decrease of 3,372,746 tons as compared with the 1920 production. The causes given for the decrease are, wage disputes, strikes and general business depression.

Two hundred and forty-nine mines were operated, an increase of eighteen mines over 1920. Of these 108 have no railroad connection and supply only local trade.

Lynn Gas Team Wins Soccer Championship

Lynn, Mass.—The Lynn Gas & Electric Company's soccer team won the championship of the B division of the Boston and district league, on Saturday, May 20, when it won from its local rival, Lynn Thistle, 3 to 1. Both elevens have been running neck and neck for the title and this contest settled it. The gas club exploded some football finesse and Low came across with a well-taken goal after seven minutes of play. Play continued even until the last fifteen minutes, when the Lynn Gas Club scored two rather easy goals.

Four New Branch Offices Opened

The Celite Products Company has established four new branch sales offices within the past few months: Boston, in charge of F. W. Emerson; Buffalo, W. D. Van Arnam; Cincinnati, L. M. Lindsey; Minneapolis, E. R. LaBelle. J. C. Etheredge has been made district manager of the New Orleans territory.

Seeks Permission to Issue Stock

San Diego, Cal.—Learning that its 1922 construction program will exceed its estimate, the San Diego Consolidated Gas & Electric Company has made application to the Railroad Commission for an order authorizing the issuance and sale of preferred stock of the par value of $535,700. The company asks to be permitted to pay a commission of not exceeding 3½ per cent for the sale of the stock. The proceeds are desired to be used in the construction of an additional gas holder of 6,000,000 cu. ft. capacity, the cost of which is estimated at $516,950.50.

Yearly Report

El Centro, Cal.—The Holton Power Company, operating in this city, Brawley, Calexico and vicinity, reports its operating revenue as $685,280.51 for the year 1921 and its operating expenses $645,491.57, giving a net operating revenue of $39,788.94. Miscellaneous non-operating revenue amounted to $26,754.13.

Interest, rent and other deductions totaled $137,152.79. The net corporate loss for the year 1921, therefore, was $70,609.72. The deficit at the beginning of the year amounted to $140,479.92.

Commission to Settle All Gas Controversies

Bridgeburg, Ont., Canada.—New arrangements have been made and in the future all controversial gas questions will be brought before a commission for settlement. Three members will be appointed to this body, one to be selected by the county, another by the gas companies operating in the district and the third to be decided upon by these two members. The personnel of the new Welland County Gas Board has not yet been announced.

Graphite as a Preventive of Boiler Scale

Tests are being made at the Southern experiment station of the Bureau of Mines, Tuscaloosa, Ala., to determine the efficacy of low-grade dust from Alabama flake graphite for preventing the formation of scale in boilers.

Correction

In our issue of June 5, page 521, first column, the first line of the third paragraph should read, "After four years at the University," instead of "one year."

Independent Steel Companies Use Gas to Save Coal

Independent steel plants at Youngstown, Ohio, have begun using natural gas, fuel oil and by-products from coke ovens to conserve their coal piles. Operators say they will be able to maintain operations at the present rate, which is about 75 per cent capacity. In the Pittsburgh district, a number of steel mills are using natural gas in large quantities for all purposes, taking advantage of the special summer industrial gas rate recently put into effect.

Asks Issuance of Bonds for Improvement to Plant

The Kansas City Gas Company, through its attorney, J. W. Dana, has filed in the office of the county recorder in Kansas City a first mortgage to secure the issuance of $2,927,000 in gold bonds. The mortgage was in the form of a book and contained 137 pages. All the property of the company is covered by the mortgage. Two and one-half million dollars of the new bond issue is to be used to retire a thirty-year issue that matured April 1, and the rest is to be used for extensions in the future.

Greenville Gas Rates Go Up

Greenville, Pa.—A new gas rate went into effect here with a boost in charges of from 10 to 40 per cent. The rate previously was from 35 to 55 cents per thousand cubic feet. The new rate ranges from 50 to 60 cents, with a penalty added after non-payment for a specified period.

R. D. Davis Elected Head of Employees' Association

The final indoor meeting of the season of the Employees' Association of the Fulton County (N. J.) Gas & Electric Company was held in the company offices recently and attended by eighty-three employees.

A chicken dinner, with all the extras, was served under the supervision of James Moore, in the courtyard in the rear of the building, and full justice was done to the list of eatables.

R. D. Davis, president of the association, acted as chairman of the affair, which was an informal one. Remarks were made by L. C. Smith, E. W. Ehmann, Walter Fox and Mr. Sheffield. Music was rendered by the employees' orchestra, and community singing was enjoyed.

Officers of the association were elected as follows: President, R. D. Davis; secretary and treasurer, M. W. Gordon; chairman welfare committee, P. K. Malone; chairman employees' committee, Harold S. Chartier.

The various committees' personnel will be named by the employees. Several outdoor affairs will be enjoyed by the members during the summer.

The association was formed last June and has about 150 members in this vicinity, and includes all employees of the company.

Uniform Rules to Extend Gas Are Under Way

Trenton, N. J.—Uniform rules for regulating the extension of gas and electric facilities by the Public Service Gas & Electric Companies are being worked out by the Public Utility Commission as a result of a conference between the commission and Public Service officials.

It is now the practice of the Public Service to make extensions on three different plans, Edmund W. Wakelee, counsel for the corporation, explained to the commission. Where it is evident that the extension will pay for itself, no charge is made to the consumer. In other cases an 8 per cent return on the cost of installing the equipment must be guaranteed by the consumer or a five-year contract made in which it is stipulated that one-half of the cost will be paid within that period. Variation of these plans by agents of the Public Service caused an increasing number of consumers to appeal to the commission for relief.

To eliminate such appeals the commission will gather data from the practices established by commissions of other States and establish uniform rules for New Jersey, applicable alike to Public Service Companies as well as other utility companies.

Refunding of $50,000 Passaic Lighting Company bonds to be sold at not less than 85 was approved by the commission, which took under advisement an application of the Public Service Railway Company to refund $100,000 bonds of the Plainfield Street Railway Company at a rate of 7 per cent. The maturing bonds of the latter company bear a 5 per cent interest rate and the Public Service claimed that 7 per cent must be allowed to guarantee a successful floating of the new issue.

New Gas and Oil Map of Pennsylvania

Announcement has been made by the Secretary of Internal Affairs, James F. Woodward, that a new gas and oil map, showing the anticlines and the synclines in the Greensburg, Pa., quadrangles, has been completed by the Bureau of Topographic and Geological Department of Internal Affairs, Harrisburg, Pa. The quadrangle lies east of Pittsburgh in Westmoreland and Allegheny counties. It contains 227 square miles and is 17¼ miles long and 13¾ miles wide. The village of New Texas is in the extreme northwest corner and Dick is in the southwest corner. Greensburg is situated about four miles northwest of the southeast corner of the quadrangle and Saltsburg is three miles east of the northeast corner.

Schools Will Teach Correct Uses of Gas

Philadelphia, Pa.—The correct usage of gas, its conservation and method of manufacture will be taught in the public schools of Philadelphia, according to an announcement by Professor S. S. Wyer. Four pages of the 50,000 geographies now being published will be devoted to the subject of gas utilization. The study will also be taught in domestic science and in physics classes.

Koppers Liquid Purification Plant at Rochester, N. Y.

The Koppers Company has received a contract from the Rochester Gas & Electric Company for a 6,000,000 ft. capacity Koppers liquid purification plant.

Koppers Liquid Purification Plants to Be Installed on Pacific Coast

The Koppers Company has received a contract from the Pacific Gas & Electric Company whereby that company will install liquid purification plants at the following points in California: San Francisco, 30,000,000 cu. ft. plant; Oakland, 30,000,000 cu. ft.; Sacramento, 5,000,000 cu. ft.; San Jose, 5,000,000 cu. ft.; Fresno, 5,000,000 cu. ft.

It is understood that the Koppers liquid purification plant being built for the Battle Creek Gas Company is about completed and will be in operation this month. This brings the total number of liquid purification plants, either in operation or under construction, up to eight, including the first plant built at the Seaboard By-product Coke Company.

Another Oklahoma Town Gets 24-Hour Service

Another Oklahoma town has been added to the rapidly growing list of municipalities served with electric light and power by Oklahoma Gas & Electric Company. The latest acquisition is Vian, forty miles southeast of Muskogee. Actual operation of the property will begin June 1. The local plant will be utilized until the new Muskogee-Fort Smith transmission line is completed; however, 24-hour service will be inaugurated at once.

Gas Company Is to Spend $666,000 on Its Plant

Miss Mary Dillon, president of the Brooklyn Borough Gas Company, recently presented schedules showing it will be necessary for the company to expend $666,000 this year in plant improvements. The schedule was submitted to Henry W. Chamberlain, counsel for the Public Service Commission.

The schedule was filed in opposition to the recent rate reduction from $1.25 to $1.15 imposed on her company.

Gas Company Asks Court to Raise Rates

Kansas City, Mo.—Permission to raise the price of gas in Kansas City from 80 cents a thousand cubic feet to 85 cents was asked by the Kansas City Gas Company.

The plea was made in the Federal court as an intervening petition asking that a temporary injunction restraining the Kansas Natural Gas Company from shutting off the supply of the local company, because it refuses to pay an increased rate, be made permanent. The company contends the Kansas Natural cannot raise the rate without an order from the Public Service Commission.

The company suggests that the amount of the increase be held pending a decision of the Supreme Court on the jurisdiction of the Public Service Commission over the Kansas Natural. If this jurisdiction is upheld the money will be refunded to the consumer. If not, it will be used in paying the Kansas Natural on the basis of the increased rate.

Jersey Blocks Gas Rise

Trenton, N. J.—A proposed increase in the rates of the Lakewood Gas Company, which were to have gone into effect this month, was suspended June 7 until Aug. 31 by the State Public Utility Commission.

Rate Case Rehearing Denied

San Francisco, Cal.—A rehearing in the San Joaquin Light & Power Corporation cases in which rate reductions were ordered was denied recently by the California Railroad Commission. It had been requested by E. Easton, a power consumer, and the California Farm Bureau Federation.

The commission said the exceptions taken to its decision were not justified.

Mid-Central Oil & Gas Co. Is Formed

At a meeting of the board of directors of the Mid-Central Oil & Gas Company, Inc., at Magnolia, Miss., permanent organization was effected by the election of officers. This is a new company and was chartered and incorporated under the laws of Louisiana with a capital stock of $50,000 with the privilege of increasing it to $500,000, if such an increase is warranted by general expansion. It holds oil and gas leases on 15,000 acres of land in the vicinity of Magnolia and has a complete drilling outfit on the ground ready to begin operations on the E. F. Cupit farm two miles southeast of the city.

The following officers were elected at the meetings: George F. Hodge, president; Dr. C. E. Wilkins, first vice-president; E. D. Richards, second vice-president; J. T. Woodland, third vice-president; Gus Llambias, secretary-treasurer, who with Clem G. Hearsy and W. T. McGuire, compose the board of directors.

John Robira and Gus Llambias were elected associate attorneys and J. H. Price, local attorney. Other elections were: E. B. Richards, drilling and field manager; J. T. Woodland, manager of leasing department; C. E. Wilkins, manager of sales department, and George H. Dodge and Clem G. Hearsy, consulting geologists. President Hodge was elected chairman of the executive committee with authority to appoint two other members of the company to transact business requiring prompt attention.

Four New Branch Offices Are Opened

The Celite Products Company has established four new branch sales offices within the past few months: Boston, in charge of F. W. Emerson; Buffalo, W. D. Van Arnam; Cincinnati, L. M. Lindsey, and Minneapolis, E. R. La Belle. J. C. Etheredge has been made district manager of the New Orleans territory.

Increase Planned in Capital Stock

Watertown, N. Y.—John N. Carlisle, president of the Northern New York Utilities, Inc., Light and Power Building, Watertown, N. Y., has called a special meeting of the stockholders of the corporation, at which time a proposition to increase the capital stock of the company from $8,000,000 to $14,000,000 will be voted upon.

Cannel Coal and Shales Are Grouped Together

Microscopic examination of cannel coal and oil shales, made at the Pittsburgh, Pa., experiment station of the Bureau of Mines by Dr. Reinhardt Thiessen, indicates that they should be grouped together, the four following types being differentiated: (1) Torbanite or cororongite; (2) Lesley or Kiskiminetas; (3) ordinary spore or Cannelton; (4) humus-resinous. Type 1 shows an organism identical with New South Wales and some French shales, while Devonian shales are of class 3.

Kansas Natural Answers Gas Company Petition

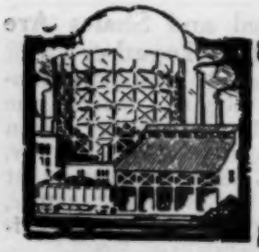
The Kansas Natural Gas Company filed an answer to the injunction application of the Kansas City Gas Company stating that the Public Service Commission of Missouri has not the jurisdiction to fix a rate for the price of gas and that the local gas company will be held directly responsible for the 5-cent raise. If the local company refuses to pay the 5-cent increase, the Kansas Natural Gas Company will shut off the supply of gas to Kansas City, the answer further states, should the court fail to make the injunction permanent.

Pipe Removal

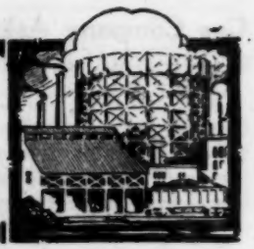
Kane, Pa.—The iron pipe line from the Lamont Pump Station to Lewis Run Borough, near Bradford, Pa., is being taken up by the United Gas Company, of Lamont. This line is about thirty-two miles in length, twenty miles of which is 12-in. pipe and the remainder 8-in. About one hundred workmen are employed and it is estimated that several months will be necessary to complete the project.

Bailey Gas Appliance Co. Incorporated

The Bailey Gas Appliance Company, of Boston, has been incorporated under the laws of Massachusetts, with a capital stock of $100,000. There are 10,000 shares of preferred stock, with par value $10 each. The directors are: President, Horace L. Bailey; treasurer, Arthur L. Bailey, 76 Sandwich Street, Plymouth, Mass., and Samuel W. Culver.



With The Equipment & Appliance Manufacturers



Conducted by Business Department of American Gas Journal

Connersville Cycloidal Pumps

The Connersville Blower Company, Connersville, Ind., have just issued a new fifty-six page catalogue entitled "Connersville Cycloidal Pumps," printed on a heavy coated paper, size 9x12. In their introduction they say:

"This catalogue is limited to illustrations and descriptions of Cycloidal Rotary Pumps, which we build in a number of styles for a great variety of applications and in many sizes with displacements as small as 1/20 gal. per revolution and as large as 1,200 gal. per revolution.

"In construction, these pumps are simple, compact and powerful. They have no valves, springs or small parts to get out of order or need renewing. No foot valves are necessary. There are no internal parts requiring lubrication. These pumps may be driven by belt or connected to steam engine, motor or water wheel. They may be made of bronze for handling salt water, acids or other chemicals.

"One particular advantage of this type of pump is that with it air or gases and liquids may be handled simultaneously."

The catalogue is illustrated with several full-page plates, and each piece of apparatus illustrated is fully described on the opposite page. The illustration shows five

Connersville Valveless Rotary Pumps

Connersville Valveless Rotary Pumps in an Eastern by-product coal plant. These pumps are of the three-lobe type, having gears ten inches in diameter and cylinders seven inches long, giving a displacement of 3.4 gal. per revolution. Three of the pumps are each handling 21,000 gal. of cold wash oil per hour against a head of 125 ft., while the other two are each moving 23,000 gal. per hour of hot wash oil at 250 deg. Fahr., against a head of 125 ft. Three pages are used for useful information tables. A copy will be sent to gas and coke company executives on request.

Motor-Driven Pressure Regulators for Controlling Suction on Gas Retorts

The Gas Machinery Company, Cleveland, Ohio, several months ago installed a motor-driven pressure regulator at the plant of the Decatur Railway & Light Company, Decatur, Ill., to control the suction of six benches of inclined sixes which were operating with scrubber standpipes and hydraulic mains provided with a wet seal. After a thorough trial they report as follows:

"The Motor-Driven Pressure Regulator or Retort House Governor maintains such a perfect suction that the gas company is able to run the benches without any seal in the hydraulic mains and the scrubber standpipes do not have any valves or plugs for closing the connection between the mouthpieces and the standpipe while charging the retorts. The heating value of the gas has also been practically constant at all times.

The vacuum of the governor is simply adjusted from time to time according to the quality of the coal used and to the heating value of the gas required.

The uniform suction in the retorts has resulted in obtaining a maximum yield and uniform quality of gas, retort carbon formation is greatly reduced, standpipe troubles eliminated and the carbonizing capacity of the retorts has been greatly increased.

The pressure regulator is provided with a one-quarter horsepower electric motor which runs with constant speed in one direction, raising and lowering a balanced valve in accordance with the pressure condition desired.